



DUPONT SUMMIT 2012

..... Pressing Issues Amid the Political Maelstrom

December 7, 2012 * Carnegie Institution for Science, Washington, DC
Sponsored by the American Public University and the George Mason University

The Policy Studies Organization

Panel Speakers

Liz Johnson, *George Washington University*

Michael Givel, *University of Oklahoma*

Paul Youngman, *University of North Carolina-Charlotte*

Topic: "Complexity Science and U.S. Policy Theory and Practice: A Roundtable Discussion of Complexity as the Paradigm Game Changer"

Major scientific theories, of the 20th and 21st centuries such as general and specific relativity, quantum mechanics, computational modeling, fuzzy logic, and chaos theory are contingent upon examining the nature of non-linear, complex, and non-contiguous systems. Yet, are we building theory and knowledge in U.S. public policy studies that incorporate complex system behavior linked to emergent policy output and policy outcomes? Currently, in the field of public policy in the U.S., several theories are considered the "more promising theoretical frameworks" including: stages heuristic, institutional rational choice, punctuated equilibrium, multiple streams, advocacy coalition framework, policy diffusion, and large N-comparative studies. However, almost all of these more promising theories are analogous to a 19th century scientific approach such as Newtonian classical mechanics, in which policy actors are part of a system of policymaking that is linear, clocklike, and mechanistic compared to 20th and 21st century scientific theories where policy system behavior is complex and non-linear.

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Human and institutional economic, environmental, and social interactions can be viewed as integrated into a broader and complex adaptive policy system. This perspective allows for exploring research and effective approaches with an emphasis on interaction dynamics, co-evolution, emergence, and critical tipping points leading to complex patterns of policy system outputs and outcomes. Furthermore, when discussing research approaches, there are the roles of the individual interlinked with the collective society to consider. Complexity research can account for simultaneous policy interactions of the individual, whole system, and environment. Complexity science can bolster policy research efforts and supplement traditional research with advanced modeling and computing power. Also, complexity tools can move policy research to a greater congruency to policy making realities with rich simulations that model the real world. Complexity tools in policy research continue to expand in application and provide invaluable insight into how complex policy systems, like science and technology expand, are created, are defended, and evolve. Since complex policy systems cannot be totally controlled, it is critical to learn how to harness the power of policy systems and their critical tipping points of vulnerability and strengthening.

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Yet, what becomes of the established U.S. policy paradigms and how can complexity theory and modeling mesh with them? The panelists in the field of policy and complexity in this roundtable discussion possess unique insights, and interdisciplinary mastery. They can explicate how effective policy, as a non-linear complex adaptive system, can evolve from the bottom-up and can demonstrate emergence.